Remarks

Claims 1-18 and 20-23 are pending.

Claims 1-18 and 20-23 are rejected under 35 USC 103(a) over Berner, et. al., US 5,476,882 which discloses polymeric micro particles stabilized by incorporation of light stabilizers.

Applicants respectfully traverse the rejections.

The instant invention provides a stable aqueous dispersion of particles with an average size of less than 1000 microns containing a carrier polymer and a non-polar organic light stabilizer wherein the light stabilizer is present in amount equal to or greater than the amount of polymer and wherein the carrier polymer is prepared in the presence of the light stabilizer by oil in water radical polymerization. Page 3, lines 5-8 of the instant specification point out that when formulating a paint or ink etc, using a dispersion which contains 50% by weight or less of additive relative to carrier polymer in a dispersion introduces into the paint or ink more non-stabilizing polymer than additive. Applicants respectfully point out that while the art discusses the value of higher concentrations of additive relative to polymer, there is no art which exemplifies or enables an aqueous dispersion approaching a concentration of 50% additive relative to polymer. A demonstration of the value of Applicants invention in providing stable, high additive dispersions was demonstrated in the previously submitted declaration.

Berner provides stabilized polymeric microparticles which contain 0.1 to 30% light stabilizer based on polymer.

In response to Applicants previous remarks, the Action states that Berner shows the polymerization of monomers in the presence of stabilizers and that prior to polymerization, once the stabilizer is added to monomers, there is 0 polymer present. Once polymerization begins the claim limitation is met...from the time in which the polymer is formed until the point in which more polymer is formed than stabilizer present. The Action further states that as one of ordinary skill knows that more light stabilizer would be more active it would be obvious to add more stabilizer and expect better results. The Action also states that the present claims read on a master batch or concentrate.

The Action refers to Example 1a of Berner. Applicants note that in this Example, a polyester is first prepared onto which other materials are grafted including a polymerizable hindered amine monomer. There is always some polymer present in Example 1, i.e., solution B1. However, this is of secondary importance to Applicants position.

The instant invention provides an aqueous dispersion of a polymer / stabilizer blend with an extraordinarily high stabilizer content prepared in a specific manner. Applicants respectfully point out that there is no suggestion in Berner that one could or should stop the polymerization at the early stage suggested by the Action, wherein there is less polymer than stabilizer, and there is especially no teaching that the resulting product could from a stable emulsion in water. Thus, while one may find in Berner an intermediate stage of a reaction a mixture that has some similarities with the instant invention, Applicants respectfully point out that there is nothing in Berner suggesting that this early intermediate composition would share any common properties with the instant invention.

Applicants point to the paragraph that bridges columns 3 and 4 of Berner which teaches that the simple microparticles of Berner do not form stable dispersions.

"The polymer microparticles according to the invention can, for example, consist solely of the crosslinked polymer core which then contains the light stabilizer. However, they then frequently do not form stable dispersions (the particles settle out) or the dispersion must be additionally stabilized by means of dispersants. Moreover, the distribution in the liquid continuous phase of the coating composition, in which the microparticles can be employed, is not ideal. It is therefore particularly preferred to modify the microparticles in such a way that stable dispersions in numerous dispersion media and good distribution in the liquid continuous phase of coating compositions are ensured. A preferred modification comprises attaching substantially linear or slightly branched polymer chains to the actual microparticle core, for example by polymerization or condensation onto the core (grafting). These linear polymers contain functional groups having such a ratio of hydrophilic and hydrophobic functions that the dispersibility of the resulting complete microparticle is enhanced and a stable dispersion is thus ensured..."

The process whereby microparticles which form stable dispersions is father discussed in column 37, lines 11-51 of Berner:

"It is particularly advantageous to produce microparticles which contain parts effecting improved dispersibility of the particles. These parts can, for example, consist of an amphipathic dispersant which is an essentially linear to branched polymer polymerized onto the polymer microparticle core. The process according to the invention is therefore carried out, for example, by

a) polymerizing one or several different ethylenically mono- or poly-unsaturated monomeric compounds or/and one or several different monomers...,

b) polymerizing one or more of the monomers indicated under a) to give an essentially linear to branched polymer and

c) polymerizing (grafting) the polymer obtained according to b) onto the polymer obtained according to a), the polymerization according to a) or according to b) or both polymerizations being carried out in the presence of one or more light stabilizers, ...and the total quantity of light stabilizer being 0.1 to 30% by weight, relative to the monomers in both polymerization steps...

The monomers which can be used in step b) are in principle those which are also employed for step a). However, they must be selected such that no cross linking occurs during the polymerization. The linear to b ranched polymers obtained according to step b) ("amphipathic dispersants") are preferably copolymers which are grafted in the conventional manner onto the crosslinked polymers obtained according to a) ("core"). Microparticles with a particularly good light stabilization are obtained when the addition of the light stabilizer is made to the polymerization step b) or to both step b) and step a)."

Applicants submit that the teaching of Berner specifies that special steps and materials be used when preparing micropaticles for use in dispersions.

Applicants further respectfully note that the instant invention requires that the polymer be formed in the presence of a non-polar stabilizer in an oil in water radical polymerization process. It is well known that the process by which a polymer is formed greatly impacts the physical properties of the resulting polymer, e.g., often oil in water polymerizations provide a different polymer species than water in oil polymerizations. Applicants submit that the previously filed Declaration showing the vast differences in the dispersion of the instant invention versus a dispersion prepared using a similar polymer prepared using a slightly different approach further demonstrates this point. Berner does not suggest any benefit of such a reaction. Again, Applicants stress that while the value of more stabilizer in an aqueous polymer/stabilizer dispersion is recognized, no art suggests that the creation of an dispersion which contains an equal or higher amount of stabilizer to polymer was possible, and no art suggests a means of preparing such a dispersion.

The Action also states that the present claims read on a master batch or concentrate. Applicants are unaware of any disclosure of an aqueous dispersion containing the polymer to stabilizer ratio of the instant invention, in particular, a disclosure which teaches one how to obtain such a dispersion. Applicants also respectfully note that the instant invention relates to a polymer/ stabilizer mixture prepared in a specific manner, and suggest, in light of previously presented data, that the manner of production is apparently related to the ability to form stable aqueous dispersions. That is, the physical composition of the polymer/stabilizer combination is determined in large part by the manner of its production. Thus, when considering the all of the elements of the instant invention, the claimed composition is novel and not at all fairly suggested or enabled by the disclosure of a generic aqueous concentrate.

Applicants respectfully aver that one can not find in Berner a disclosure of an aqueous dispersion comprising a polymer and at least equal amounts of stabilizer. Also, one does not find in Berner any teaching that stopping the reactions therein at some early intermediate stage would provide a useful product, especially a product that can be converted into the storable aqueous dispersion of the invention. Applicants further respectfully maintain that until the instant intention, a storable aqueous dispersion with the ratio of carrier polymer to stabilizer was not known nor was there a suggestion that the instant process would aid in producing such a dispersion. Applicants also believe that the present wording of the claims when read in light of the specification is adequate to efficiently define the invention and differentiate the invention over the art for one skilled in the art.

Applicants therefore respectfully submit that the rejections under 35 USC 103(a) over Berner, et. al., US 5,476,882 are addressed and are overcome and kindly ask that the rejections be withdrawn and that claims 1-18 and 20-23 be found allowable. In the event that minor amendments will further prosecution, Applicants request that the Examiner contact the undersigned representative.

Respectfully submitted,

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